Memorandum

To: Bruce Kisliuk and Jasemine Chambers, Directors 1600

CC: Deborah Reynolds, QAS

From: Joseph Woitach, Examiner 1632

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Re: SAWS Report

Serial Number: 09/982,637
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Effective Filing Date: January 18, 1996 as divisional of 08/591,246, US Patent 6,200,806
Assignee: None
Primary Examiner: Joseph Woitach
SPE: Ram Shukla
Prosecution Status: After Final terminal disclaimers filed/approved over '806 and 780 patents-in condition for allowance
Title: Primate embryonic stem cells
Inventors: James Thomson
Key Words: human embryonic stem cells

Short Summary of Technology (non-technical)

At the time of filing the prior art teaches that primate and human embryonic stem cells had not been isolated with methods known in the art. The present specification provides methods for isolating primate and human embryonic stem cells and a detailed characterization of these stem cells. In particular the specification is the first to describe how primate stem cells differ from those previously isolated, for example mouse embryonic stem cells. Several human stem cells lines have been subsequently isolated and described in the art having the same characteristics as instantly disclosed. The instantly claimed embryonic stem cells are unique over the because they are highly pluripotent capable of giving rise to all three cell type origins and cells of the trophoderm. Additionally, the cells maintain a normal karyotype unlike other cells previously described in the prior art.

Impact statement

The present claims differ from those previously allowed in that they set forth the new limitation that the stem cells proliferate in vitro without the addition of leukemia inhibitory factor (LIF)-compare claims 1 (i) of '806 or 780 with 12 (i) of the present claim set (or as underlined below).

Sample claim

1. A replicating in vitro cell culture of human embryonic stem cells comprising cells which (i) are capable of proliferation in vitro culture for over one year without the application of exogenous

leukemia inhibitorv factor, (ii) maintain a karyotype in which the chromosomes are euploid through prolonged culture, (iii) maintain the potential to differentiate to derivatives of endoderm, mesoderm, and ectoderm tissues throughout the culture, and (iv) are inhibited from differentiation when cultured on a fibroblast feeder layer.